

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

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In the Matter of	)	
	)	
Access Charge Reform	)	CC Docket No. 96-262
	)	
Price Cap Performance Review for Local Exchange Carriers	)	CC Docket No. 94-1
	)	
Transport Rate Structure and Pricing	)	CC Docket No. 91-213
	)	
Usage of the Public Switched Network by Information Service and Internet Access Providers	)	CC Docket No. 96-263
	)	

**COMMENTS OF SOUTHWESTERN BELL TELEPHONE COMPANY  
IN RESPONSE TO NOTICE OF INQUIRY CONCERNING  
INFORMATION SERVICE AND INTERNET USAGE**

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**March 24, 1997**

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CC Docket Nos. 96-262, 94-1, 91-213 and 96-263

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IN RESPONSE TO NOTICE OF INQUIRY CONCERNING  
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**COMMENTS OF SOUTHWESTERN BELL TELEPHONE COMPANY  
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On December 24, 1996, the Federal Communications Commission ("Commission") released its *Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry on Implications of Information Service and Internet Usage* in the captioned dockets. The *Notice of Proposed Rulemaking* ("NPRM"), which dealt broadly with an array of issues related to reform of the current access charge structure, had a separate pleading cycle from the *Notice of Inquiry* ("NOI"), which dealt specifically with the applicability of access charge rules to information service providers ("ISPs") and Internet providers. In the NPRM, the Commission considered "the narrow question of whether to permit incumbent LECs [local exchange carriers] to assess interstate access charges on information service providers."<sup>1</sup> The Commission also recited the history of the "enhanced

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<sup>1</sup>NPRM/NOI, ¶ 283.

service provider (“ESP”) exemption” from access charges: although ESPs/ISPs may use incumbent LEC facilities to originate and terminate interstate calls, ESPs/ISPs are not required to pay interstate access charges but rather may purchase services using the same intrastate tariffs available to end users.<sup>2</sup>

In the NOI, the Commission pointed out that it had tentatively concluded in the NPRM that:

information service providers should not be subject to interstate access charges as currently constituted. However, the development of the Internet and other information services raise [sic] many critical questions that go beyond the interstate access charge system that is the subject of this proceeding. Ultimately, these questions concern no less than the future of the public switched telephone network in a world of digitalization and growing importance of data technologies. Our existing rules have been designed for traditional circuit-switched voice networks, and thus may hinder the development of emerging packet-switched data networks. To avoid this result, we must identify what FCC policies would best facilitate the development of the high-bandwidth data networks of the future, while preserving efficient incentives for investment and innovation in the underlying voice network. In particular, better empirical data are needed before we can make informed judgments in this area.<sup>3</sup>

In the NOI, the Commission sought comment on a number of issues related to the application of access charges to information services and Internet usage. In these Comments, Southwestern Bell Telephone Company (“SWBT”) responds to those questions.

**ISSUE 1: How can the Commission’s rules most effectively create incentives for the deployment of services and facilities to allow more efficient transport of data traffic to and from end users?<sup>4</sup>**

The Commission’s rules should provide incentives for ESPs/ISPs to move to new technology services, which more efficiently transport data traffic to and from end users. The Commission’s

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<sup>2</sup>NPRM/NOI, ¶¶ 284-285.

<sup>3</sup>NPRM/NOI, ¶ 311.

<sup>4</sup>NPRM/NOI, ¶ 313.

rules should also offer incentives for LECs to develop and deploy new technology services. The current ESP exemption from access charges results in disincentives for ESPs to move to more efficient technologies because the exemption distorts the ESPs' purchasing decisions. Currently, ESPs/ISPs choose to access the local exchange network through the cheaper-priced, flat-rated local exchange services permitted by the ESP exemption. This choice precludes the value and quality of services provisioned through new technologies.

Further, the Commission's rules should provide incentives for efficient buying decisions by ESPs/ISPs. These incentives would be achieved by eliminating the ESP exemption and by applying to existing service arrangements the revised switched access structure proposed in SWBT's Comments in the general access reform proceeding.<sup>5</sup> In this way, traffic-sensitive components would be appropriately recovered on a usage sensitive basis, while non-traffic sensitive components would be appropriately recovered on a flat-rated basis. This structure would provide the proper pricing signals for ESP/ISP customers when they are making purchasing decisions.

Finally, the Commission's rules should also provide incentives for LECs to develop and deploy new technology services by allowing new services to be introduced outside of price caps using contract-based pricing. Section 706 of the Telecommunications Act of 1996 ("the 1996 Act") specifically charges the Commission with encouraging the deployment of advanced telecommunications on a reasonable and timely basis. Permitting LECs pricing flexibility (i.e., volume and term discounts, contract tariffs, and requests for proposal) for switched access services would allow rates to be more closely aligned with the way LECs incur costs. In addition, permitting

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<sup>5</sup>Comments of Southwestern Bell Telephone Company, CC Docket No. 96-262, filed January 29, 1997.

LECs pricing flexibility to respond to competition would lead to investment in new technologies and deployment of new services based on customer preferences. Elimination of the ESP exemption will provide some assurance that ESP/ISP customers' purchasing decisions will be based on the services and features they need and desire for the efficient provision of their services, rather than on the inexpensive availability of subsidized local service.

**ISSUE 2(a): What regulatory barriers -- at either the state or federal level - might prevent provision of alternate network access arrangements for information services?<sup>6</sup>**

The current regulatory policies at the state and federal levels discourage the efficient use of the circuit-switched network. In SWBT's operating territory,<sup>7</sup> all of the states' pricing guidelines require flat-rated pricing for residential and business customers to access the circuit-switched network. Likewise, the Commission's rules exempt ESPs/ISPs from the requirement to pay for network access on a per-minute basis. These pricing rules thus send improper, uneconomic pricing signals both to users of enhanced/information services, as well as providers of these services. The increased use of the circuit-switched network and the corresponding cost increases brought about by the demand for ESP/ISP services are not proportionally matched on either the state or federal level with additional compensation for the LECs.

All customers that use the circuit-switched network should pay rates that reflect the costs incurred for such usage. Special pricing treatments imposed or mandated by regulators, based on the application or on the customer type are inappropriate and unsustainable in the increasingly

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<sup>6</sup>NPRM/NOI, ¶ 314.

<sup>7</sup>SWBT is an incumbent LEC in the states of Arkansas, Kansas, Missouri, Oklahoma, and Texas.

competitive access market. Subsidies, such as those that ESPs/ISPs receive through the use of local exchange service, are neither justifiable nor sustainable. Local exchange rates were developed based on the “POTs” calling characteristics of residential and business voice calling, and the industry and regulators did not consider, or even anticipate, the call characteristics of ESP traffic. Such traffic has holding times that are eight to ten times greater than those of voice traffic. As a result, the rates for services used by ESPs and Internet Service Providers do not produce revenues that are proportionate to the costs of these traffic characteristics. This results in voice customers implicitly subsidizing the services used by ESPs and Internet Service Providers. As long as this pricing anomaly exists, ESPs/ISPs will continue to select the cheaper local exchange services, while the incentives to move to the higher quality services will be minimized.

On the other hand, LECs must continue to escalate investments and other costs in order to keep up with the increased traffic growth being imposed on their circuit-switched networks by ISPs while receiving no proportionally commensurate revenues. The resulting limited availability of resources, coupled with minimized incentives for ESPs/ISPs to move to the new services, reduces both the ability and incentive of the LECs to deploy the new technology.

**Issue 2(b): Should the Commission use its forbearance or preemption authority to avoid results that would hamper the deployment of new technologies?<sup>8</sup>**

The Commission need not use its forbearance or preemption authority to avoid results that would hamper the deployment of new technologies. However, consistent with the mandate to create incentives for the deployment of advanced telecommunications services contained in Section 706

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<sup>8</sup>NPRM/NOI, ¶ 314.

of the 1996 Act, the Commission should permit SWBT and other LECs the necessary pricing flexibility. That flexibility would enable SWBT to price its services on cost-causative principles that are both economically rational and market sensitive.

On the other hand, the Commission should not perpetuate disincentives such as the ESP exemption. Special pricing treatments permit ESPs/ISPs to use flat-rated local exchange services rather than access charges that, as proposed in the Access Reform proceeding, have flat rates for non-traffic sensitive cost components and usage-sensitive rates for traffic-sensitive cost components. ESPs/ISPs use the circuit-switched network differently from most end users. For example, they use the circuit-switched network to collect, aggregate, and concentrate traffic from end users, and in most cases transmit or transport the traffic elsewhere. This use of the circuit-switched network is closer to carriers' use of the network than that of end users. Because of this similarity, the usage-sensitive cost recovery for traffic sensitive costs and the fixed (flat-rated) cost recovery of non-traffic sensitive costs, as contained in SWBT's proposed access structure, are appropriate. The revised access structure would also provide the proper pricing signals to ESPs/ISPs for making purchasing decisions.

**ISSUE 3: Identify means of addressing the congestion concerns raised by incumbent LECs, e.g., by deploying hardware to route data traffic around ILEC switches, or by installing new high-bandwidth access technologies such as asymmetric digital subscriber line (ADSL) or wireless solutions.<sup>9</sup>**

SWBT is in the process of deploying and offering a new packet-based technology service for Internet and Intranet access applications. The new service, called Internet/Intranet Transport

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<sup>9</sup>NPRM, NOI, ¶ 313.



Service ("IITS"), offers Internet service providers and Intranet (corporate and university) service providers a higher quality packet service as an alternative to the circuit-switched network for providing connections between end users and their Internet/Intranet access services.

With IITS, end-user calls to ISPs are routed to and through the IITS data platform rather than over SWBT's circuit-switched network. An "intelligent peripheral" ("IP") located in the end office of the end user is programmed to recognize when an end user makes a call to their ISP and routes the call to the "Data Gateway" in the IITS server. The Data Gateway performs the modem functions that typically are performed by ISPs in a circuit-switched network. From the Data Gateway, the call, now in a data format, goes to the Data Switch, which formats the call data stream into "frame-relay" packets for transport to the ISP.

Today, when Internet traffic is handled via the circuit-switched network, the traffic originating from clusters of subscribers is funneled to a few high-traffic points in the network. This "funneling/concentration effect" raises the average traffic volumes beyond the normal switched access parameters.

The traffic from these clusters of users creates a real traffic overload on the line side equipment of a given switch. As an example, a large ISP with 2,000 lines (not an uncommon occurrence) will use 6% of the total number of lines in a 50,000-line office. However, the ISP might easily use 100% of the lines in any given switch line unit. If a 1,000-line unit is engineered for 6 CCS ("hundred call seconds": the method used by network engineers to measure usage characteristics) per user in the busy hour, but instead receives 30 CCS per user in the ISP's busy hour, it is being subjected to 500% excess traffic.

SWBT can, and does, attempt to manage the "cluster traffic" by continually decreasing the line-to-trunk concentrations. This load balancing process is dependent on routine growth and calling patterns; however, in the radically dynamic Internet arena, the labor and ability to deploy additional equipment is reactive and very costly.

By deploying a packet-based alternative to the traditional circuit-switched network, the high line-side concentration, as well as tandem and interoffice trunking congestion, can be eliminated by moving the ISP to a packet-based interface. This interface may substantially mitigate the need for additional line-side equipment, tandem, and interoffice trunking to support the cluster calling patterns. In addition, and possibly most importantly, it offers the potential for mitigating the traffic overload conditions.

SWBT's IITS, as described above, offers a method of addressing the immediate and growing need for dial-up Internet calls. ADSL, on the other hand, may be utilized in the future to provide a dedicated high-speed connection between ISPs and end users. To the extent that ADSL can address high-speed (i.e., above 128 Kbps) access on a dedicated basis, additional traffic may be removed from the circuit-switched network with this technology. In addition, cable modems may allow for the delivery of a variety of communication services over cable, e.g., including telephony, data and video.

While services such as SWBT's IITS, ADSL, Cable Modems and other dedicated access alternatives will evolve over the next few years, these technologies are only in the early stages of deployment. As a result, these technologies will offer an alternative to only a portion of the projected demand growth in ISP access traffic and the increase in busy hour CCS. Even with the

availability of these new technology driven services, without the incentives (i.e., elimination of the ESP exemption) for these customers to move to these new services, there will be minimal relief and corresponding cost mitigation for the circuit-switched network.

**ISSUE 4(a): What are the effects of the current system on network usage, ILEC cost-recovery, and development of the information services marketplace? Provide data on the characteristics of information service usage and its effects on the network.<sup>10</sup>**

End user access to information service providers and corporate networks has been growing rapidly. All studies indicate that these growth rates will continue and will even accelerate over the next several years. Attachment 1 shows the results of a study commissioned by SWBT which projects these growth rates.

The results of this growth are busy-hour and busy-day shifts, larger magnitude and more frequent blocking in certain central offices (especially those for ISPs), congestion in interoffice trunk groups, and congestion in internal modules of SWBT's switching systems.

While some of these stresses on the network are localized, others, such as congestion in interoffice trunk groups, impact large segments of the LECs' circuit-switched networks. Even where localization of the congestion and other stress occurs, it neither diminishes the seriousness of the potential for problems nor the economic impact (costs) required to address and relieve the problem areas. For example, in one of SWBT's major metropolitan areas, over 70% of the Internet Service Provider traffic is concentrated in less than 25% of the serving offices (10 out of 42 offices). One of those offices - a tandem in the downtown area - carries over 31 percent of the total Internet traffic

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<sup>10</sup>NPRM, NOI, ¶ 315.

load. There are three additional offices that carry nearly 20% of the Internet Traffic load, and another six offices that carry slightly more than 20% of the load.

Network studies performed by or for SWBT show that long holding time traffic, which is predominant in Internet access through ISPs, is having a large cost impact on SWBT's network. This impact can be seen by comparing the annual usage growth realized from non-Internet usage (CCS per line) with the growth of CCS for ISP subscribers.

For non-Internet subscribers, the growth was a rather modest 2% annually. The CCS growth for ISP subscribers was forecast both conservatively and aggressively. The conservative projections indicate that CCS usage will double by the end of the study period (2001). Therefore, the level of increase from the current usage per-line of 8.34 CCS in 1996 will grow to 16.68 CCS by the year 2001. The aggressive forecasts project a four-fold increase in CCS by the year 2001, or 33.36 CCS. With the recent advent and aggressive advertising of "flat rated" Internet access packages by ISPs, SWBT is already, in early 1997, seeing usage in the 30 CCS per line range. Attachment 2 graphically shows the traffic load relationship between ISPs, ISP subscribers and average voice subscribers.

**ISSUE 4(b): Provide data on (1) the ILEC's costs directly related to ESPs' use of the PSTN; (2) ILECs' revenues attributable to ESP traffic (including second phone lines); and (3) comparisons of what PSTN services ESPs desire, as opposed to what they currently have access to.<sup>11</sup>**

Incumbent LECs' major capital expenditures required to support this traffic increase are the result of the need to "deload" switches and the addition of resources to handle the high CCS usage.

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<sup>11</sup>NPRM/NOI, ¶ 315.

Based on conservative estimates, the capital costs to support Internet traffic using the current operational methods throughout SWBT's territory is estimated to be in excess of \$600 million over the next five years. This cost would be incurred to simply keep the circuit-switched network working effectively so as to ensure adequate and reliable service for all customers.

Because of the ESP exemption, which permits ESPs/ISPs to purchase flat-rated local exchange services, there is no proportionally commensurate revenue attributable to ESP traffic. Depending upon the local exchange service purchased, there may not even be the recognition that usage is involved. Business local exchange rates, while on average may cover their costs for POTS use, were not established to recover costs generated by ISP traffic. Continuation of the current exemption will result in pressure for increases in all local exchange rates to recover the usage costs of a small fraction (currently less than 20%) of the subscribers. There is simply no justification for such uneconomic pricing.

The revenues received from second lines do not recover their costs when such lines are used for accessing the Internet. Second lines do generate additional revenues for SWBT; however, the additional revenues are primarily generated from vertical services and state long distance, not from the basic second line service. This is particularly true for residence second lines. Like other SWBT local exchange services, second lines are flat-rated, and second residence lines in most cases do not even cover the cost of the line. As with other local exchange services, second lines are predicated on the same POTS calling characteristics as other local exchange services. As such, the rates for switching and common transport components for second lines do not recover the costs associated with the traffic characteristics and load of Internet calls. In addition, when used for Internet

connection, subscribers to additional lines usually do not purchase the vertical services which provide the additional contribution, nor do those lines generate additional toll revenues. Even if second lines in the aggregate are covering their costs, second lines used with computers for accessing the Internet are not covering their costs. To the extent that revenues from non-computer connected second lines are providing any contribution, that contribution is directed to supporting universal service goals such as basic residential service. There is no justification for Internet providers to be recipients of any subsidy, and certainly not from other basic telephone subscribers.

**ISSUE 4(c): What administrative and technical issues may arise under continued operation of the current system or as modified by this proceeding? Comment particularly on jurisdictional, metering and billing, given the difficulty of applying jurisdictional divisions or time-sensitive rates to packet-switched networks, such as Internet.<sup>12</sup>**

It is almost impossible to determine, measure and bill on a jurisdictionally-specific basis the traffic that terminates to ISPs and the Internet. Intuitively, one would surmise that a preponderance of the traffic is interstate. As with other situations where jurisdiction is an issue and actual measurement is not possible, self-reporting by ESPs/ISPs and/or application of the 10% rule could be required. However, not only is jurisdiction of no significance to ISPs, but because of the equipment and technology utilized by ESPs and ISPs it is doubtful that they could determine the jurisdiction of the traffic.

Even if jurisdiction could be reported on a percent interstate basis "PIU," if there is a pricing difference between interstate and intrastate, the PIU will reflect the lower priced service. In

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<sup>12</sup>NPRM/NOI, ¶ 315.

addition, as long as the ESP exemption remains in place, jurisdictional reporting is meaningless, since the ESP's access to the local exchange network is rated as if local exchange traffic, and only the loop costs are jurisdictionally recovered (through the application of the End User Subscriber Line Charge, or "EUCL") in the rates paid by the ESP/ISPs.

Additionally, the newer technologies and the future services to be utilized by ESPs/ISPs and others (i.e., packet-switched) are not necessarily compatible with the traditional minute-of-use type measurement and billing. Alternative types of measurement and billing techniques and methods (i.e., kilo-character, flat rate by capacity or bit-rate) may be more appropriate. In addition, these types of provisioning and billing alternatives may be more attractive and thus may be an incentive for ESPs/ISPs to move to these services.

**ISSUE 5: Should the Commission distinguish between different categories of information or enhanced services?<sup>13</sup>**

The Commission should not attempt to distinguish between categories of information or enhanced services. It is impractical, if not impossible, to accurately/empirically distinguish between different types of ESPs/ISPs. The type of ESP/ISP or application is indistinguishable by or to the network. Many ESPs/ISPs provide multiple types of applications using the same network services and features. The network is used the same regardless of the type of ESP/ISP or the application it provides.

Telephony, which utilizes the Internet for the interexchange and/or interstate transport medium, is indistinguishable from regular telephony. Further, it is no longer justifiable or

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<sup>13</sup>NPRM/NOI, ¶ 316.

sustainable for there to be artificially-established and arbitrarily-distinguishing criteria mandated by regulation for different categories or classifications of customers. It is equally no longer justifiable or sustainable for there to be different and discriminatory pricing based on these regulatory mandated artificial classifications. Pricing should be cost causative, market sensitive/responsive and based on services (facilities and features) utilized.

**ISSUE 6: How should new services such as Internet telephony, as well as real-time streaming audio and video services over the Internet, affect the FCC's analysis?<sup>14</sup>**

SWBT is not suggesting nor does it favor regulation of information services or services provided by Internet Service providers. However these telecommunication services customers should not be subsidized by other customers. Pricing rules for the telecommunications services used by this competitive market segment should be based on cost causative principles for the resources utilized to facilitate a given service not on what the service provides.

**ISSUE 7: Should issues raised in this NOI be addressed in any existing proceeding, or in a new proceeding?<sup>15</sup>**

These issues should be addressed and resolved in the existing Access Reform proceeding, CC Docket No. 96-262. SWBT encourages the Commission to resolve these issues expeditiously.

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<sup>14</sup>NPRM/NOI, ¶ 316.

<sup>15</sup>NPRM/NOI, ¶ 317.



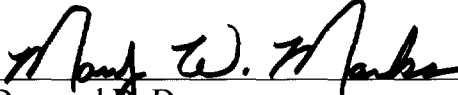
## CONCLUSION

The current ESP exemption, which permits ESPs/ISPs to access the local exchange network through flat-rated local exchange services rather than through usage-based access services, discourages ESPs/ISPs from making efficient buying decisions in acquiring local access. In order to create incentives for the deployment of services and facilities that allow more efficient transport of data traffic to and from end users, the Commission must eliminate the existing ESP exemption and must implement the revised switched access charge structure that SWBT proposed in its Comments in the general access charge reform pleading cycle. Furthermore, LECs should be given pricing flexibility so that rates for services may be more closely aligned with the incurring of costs for the provision of those services. LECs are incurring mushrooming capital costs in order to support information service and Internet service traffic, with no commensurate revenue since ESPs/ISPs are able to purchase flat-rated local exchange services. Forcing LECs and voice telephone services end users to subsidize the services of ESPs/ISPs is neither appropriate nor lawful, nor, as stated above, does it provide the correct incentives for ESPs/ISPs to make available

to end users state-of-the-art technologies and services. This unwarranted asymmetry in the access charge structure must be corrected *now*, as part of the Commission's sweeping proceeding on access charge reform.

Respectfully submitted,

SOUTHWESTERNBELL TELEPHONE COMPANY

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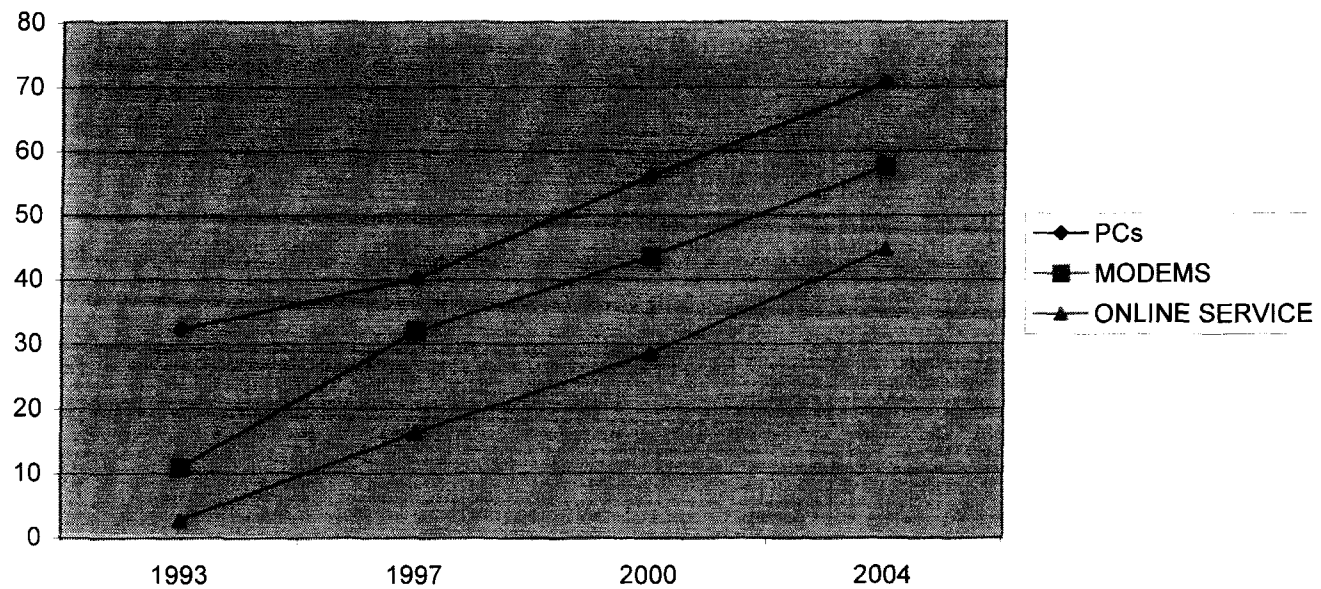
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March 24, 1997

## PERCENT OF HOUSEHOLDS WITH

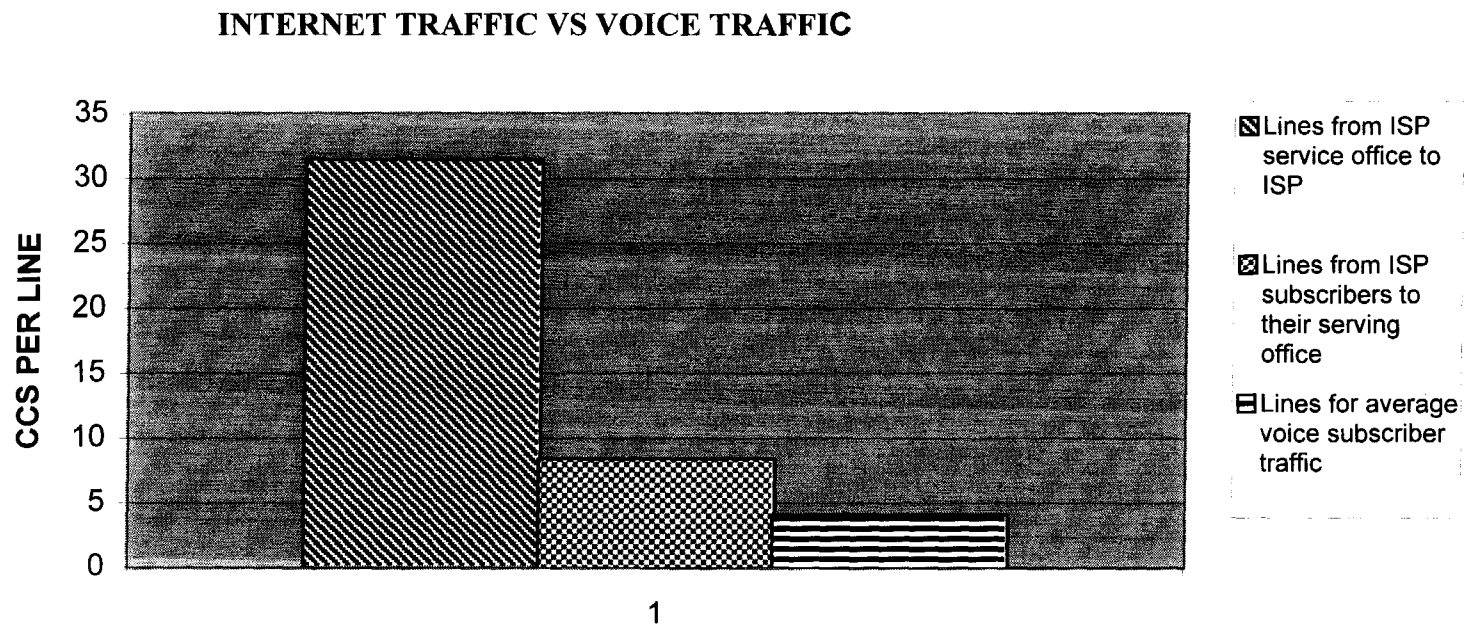
	<u>1993</u>	<u>1997</u>	<u>2000</u>	<u>2004</u>
<b>PCs</b>	32.2	40.1	56.2	70.7
<b>MODEMS</b>	10.9	31.9	43.6	57.6
<b>ONLINE SERVICE</b>	2.7	16.3	28.5	44.7

## PERCENT OF HOUSEHOLD WITH



**INTERNET TRAFFIC VS. VOICE TRAFFIC**

Lines from ISP service office to ISP	31.4 CCS
Lines from ISP subscribers to their serving office	8.34 CCS
Lines for average voice subscriber traffic	4 CCS



CERTIFICATE OF SERVICE

I, Katie M. Turner, hereby certify that the foregoing, "COMMENTS OF SOUTHWESTERN BELL TELEPHONE COMPANY" in Docket No. 96-262, 94-1, 91-213 and 96-263 has been filed this 24th day of March, 1997 to the Parties of Record.

A handwritten signature in cursive script that reads "Katie M. Turner". The signature is written in black ink and is positioned above a horizontal line.

Katie M. Turner

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